PROCEEDINGS

OF THE

Hawaiian Entomological Society

VOL. VI, No. 1. FOR THE YEAR 1924. AUGUST, 1925

JANUARY 3, 1924.

The 217th meeting of the Hawaiian Entomological Society was held in the entomological laboratory of the experiment station of the Hawaiian Sugar Planters' Association, President Swezey presiding. Other members present: Bryan, Giffard, Timberlake, Willard, Bissell, Ehrhorn, Rosa, Crawford, and Fullaway.

The minutes of the previous meeting were read and approved with corrections.

The report of the Secretary that the accounts of the Treasurer for 1923 had been audited and found correct was accepted.

The Executive Committee reported the selection of Mr. Rosa as librarian; Mr. Timberlake, custodian of collections; and Mr. Swezey editor for 1924.

The interest of the Society in the arrangements for the Food Conservation Congress to be held in Honolulu in the summer of 1924 was discussed, and it was decided that Mr. Muir should represent the Society in this respect. Mr. Crawford offered the following resolutions in connection with the same subject, which were adopted:

"The Hawaiian Entomological Society recommends that a suitable guide book be printed by the Pan-Pacific Union for the benefit of the delegates who attend the forthcoming Food Conservation Congress in 1924, this proposed pamphlet to give information in sufficient detail concerning the points in Hawaii which may be visited by the delegates. In addition to various points of interest throughout the Islands, there should be special

sections in the guide devoted to entomological, zoological, and botanical features which should be brought to the attention of our visitors. The Hawaiian Entomological Society volunteers its assistance in preparing the entomological portions of this guide.

"The Hawaiian Entomological Society recommends that the general subject of economic entomology and such features of quarantine as may fall under it be combined into one section at the forthcoming congress. Where a conference is desired on interrelated subjects in entomology, plant pathology, and animal industry, it can be arranged for by the different chairmen."

NOTES AND EXHIBITIONS.

Insects of Ewa coral plain.—Mr. Bryan exhibited insects caught Christmas day, 1923, on the Ewa coral plain near the beach below the Magnetic Station: Various bruchids, including *Bruchus amicus* Horn were found, especially hiding in wiliwili seed pods. Bruchid parasites were very abundant under the algaroba trees along the beach, *Glyptocolastes bruchivorus* Crawf. and *Heterospilus prosopidis* Vier. Horn-flies were numerous upon cattle and horses, and other flies, including *Musca vicina* Macq. and *Stomorhina pleuralis* (Thomson), were continually caught. The little black roach with vermilion spots, *Euthyrrapha pacifica* (Coq.), and the conspicuous black and brown click beetle, *Melanoxanthus melanocephalus* (Thunb.) were also abundant. The most interesting find was the harlequin cabbage bug, *Murgantia histrionica* (Hahn), abundantly in cop on a bush of *Capparis Sandwichiana.*

Coelophora inaequalis (Fab.).—Mr. Timberlake exhibited a specimen of the eight-spotted phase of this lady beetle, collected at Kaimuki on December 23, 1923. Larvae of this variety were liberated at Kaimuki in 1920, but no adults.

Zelus egg-parasite.—Mr. Timberlake also reported the introduction of a *Zelus* egg-parasite, *Phanurus* sp., collected and sent by Mr. Osborn from Cuernavaca, Mexico, where it occurs in the eggs of *Zelus rubidus,* a species larger than our *renardii.* The parasite has been reared on *renardii* eggs and several lots of individuals have been liberated on Ewa Plantation, where Mr. Muir observed them ovipositing in the eggs of *Z. renardii.*

The male individuals in this species appear very peculiar, having a large head, and black, ligulate wings. Individuals of this sex fight among themselves, and it is seldom a perfect specimen is found. It is usually the antennae that are bitten off. Mr. Osborn's material included also a species of *Telenomus* with yellow legs.

Pheidole megacephala Fab.—Mr. Ehrhorn reported an observation on this ant while swarming. The swarm was mostly queens. The striking part was the capturing of the queens and males by workers and soldiers when they lighted on the cement walk. He exhibited some specimens in a vial, showing the workers and soldiers still attached to the feet of the queens and males. They seemed to hold these forms in place—for what purpose it was impossible to state.

Mr. Fullaway reported observing the turrets of earth made by *Pheidole megacephala* about the entrances to their underground runways after heavy rains.

Mr. Ehrhorn also reported the occurrence of the soft scale, *Lecanium æquale* Newstead on orchids in Hawaii, at the same time expressing the belief that it has been here unrecognized many years.

Bruchus sp. near *coryphae* Oliv.—Mr. Swezey exhibited five specimens of a bruchid, which were captured by him at Barber's Point, Oahu, December 23, 1923, taken by sweeping on *Myoporum Sandwicense* bushes. This is the first record of the capture of this weevil in the Hawaiian Islands. Very little was found in literature regarding the species, but in a table of American Bruchidae by Fall (Tr. Am. Ent. Soc., 36, p. 164, 1910) these specimens run to the species *coryphae,* which was described by Olivier in 1795. It occurs in Georgia and Texas, and is probably not of economic importance or would have been mentioned in economic literature. The inference is that *coryphae* occurs in connection with the Corypha palm. It was thought that probably at Barber's Point it was breeding in algaroba beans, that being the only legume noticed, and the weevils were captured associated with other algaroba weevils, such as *Caryoborus gonagra* (Fab.), *Bruchus prosopis* Lec. and *B. sallaei* Shp. A specimen of *B. pruininus* Horn and one of *B. amicus*

Horn were also captured in the same circumstances. All of these were taken from bushes of *Myoporum,* where they had, no doubt, found a place of shelter or of hiding.

Glyptocolastes bruchivorus Crawf.—Mr. Swezey reported the capture of a single female of this bruchid parasite, at Barber's Point, Oahu, December 23, 1923. He also reared twenty-four specimens of it and four of *Urosigalphus bruchi* Crawf. from algaroba pods brought in from the same place.

Murgantia histrionica (Hahn).—Mr. Swezey also exhibited nine specimens of the harlequin cabbage bug which he had collected on *Capparis Sandwichiana* on the Ewa coral plain along the road about halfway between Gilbert and Barber's Point, December 23, 1923. The bug had no doubt bred on this plant, for one small nymph was also captured on it. This is the first instance of this bug being captured in the open in Hawaii. It was previously recorded by Mr. Ehrhorn as captured in packing in furniture at the February 1 meeting of the Society. See Proc. Haw. Ent. Soc., III, No. 5, p. 370, 1918.

Supella supellectilium (Serv.).—Mr. Swezey reported collecting this roach in his house in Manoa December 23, thus extending its known range.

Pluchea indica.—Mr. Swezey called to attention that Professor Pollock had informed him that this is the name of the Eupatorium-like shrub so abundant in the Waikiki swamps, where it was first noticed a few years ago. He also stated that he had reported the occurrence of this plant at Nawiliwili, Kauai, September, 1920, but this fact had been inadvertently omitted from his note as printed in Proc. Haw. Ent. Soc., IV, No. 3, p. 524, 1921.

FEBRUARY 7, 1924.

The 218th meeting of the Hawaiian Entomological Society was convened at the usual place at 2:30 p. m. The following members were present: President Swezey presiding, and Messrs.

Bissell, Bryan, Crawford, Ehrhorn, Giffard, Rosa, Whitney, Timberlake, Wilder and Willard.

Mr. Willard was appointed acting secretary-treasurer to serve during the absence of Mr. Fullaway from the Territory.

The minutes of the previous meeting were read and approved.

Mr. Swezey reported a communication to the H. S. P. A. Experiment Station from the National Southeastern University, College of Agriculture, Nanking, China, which stated that fire had destroyed their library. Upon motion by Mr. Crawford, it was voted that the Society donate a set of its Proceedings to them, together with any other duplicate scientific papers that it might have.

Upon motion by Mr. Ehrhorn, it was voted that the Society donate a set of its Proceedings and other duplicate scientific papers to the Imperial Plant Quarantine Station of the Department of Agriculture and Commerce at Yokohama, Japan.

PAPERS.

"Diptera of Hawaii."

BY E. H. BRYAN, JR.
(Withdrawn for publication elsewhere.)

NOTES AND EXHIBITIONS.

Ceratitis capitata Weid.—Mr. Bryan exhibited specimens of the fruit of *Terminalia pallida,* which were infested with the larvae of this fruit-fly, and from which he had bred adult specimens. He stated that the tree was imported from the Philippines, and was growing behind the chapel of Kamehameha Schools.

Lachnus tujafilinus (Del Guercio).—Mr. Ehrhorn exhibited specimens of this Aphid, found on *Thuya orientalis,* Manoa Valley, January 27, 1924. The tree is eight years old, and was obtained from the Government Nursery on King Street. He also found a specimen on a Thuya tree in Kamanele Park, Manoa Valley, which was five years old and also obtained from the Government Nursery.

Conibius sp.—Mr. Ehrhorn exhibited a vial containing a large

number of beetles found congregated under a board at the Division of Plant Inspection Station, Honolulu, January 7, 1924. He stated that it was *Conibius* sp. near *brunnipes,* and had been reported before.

New spider.—Mr. Ehrhorn exhibited a spider which is apparently new to Hawaii. He found it January 27, 1924, in a box of Amaryllis bulbs in the basement of his house, where they had been removed for resting.

Xylocopa varipuncta Patton.—Mr. Ehrhorn exhibited a nest of this bee in a six-inch limb of an avocado tree. There were six males and sixteen females in the nest, where they seemed to want to stay, it being necessary to use kerosene to drive them out.

Mylabris sallaei (Shp.).—Mr. Bissell reported breeding this bruchid from green and ripe pods of algaroba collected June 27 to 30, 1922, in six localities: Kawaihae to Napoopoo, on the Island of Hawaii; Kawaihae and Kiholo, on the beach; Kiholo, from a single tree growing one mile up the mountain from the beach on Pahoehoe, where there was no other vegetation except sparse grass.

Phidologiton sp.—Mr. Whitney exhibited a large number of specimens of this ant, taken in quarantine in a basket of yams from China.

Phloeophagosoma tenuis (Gemm.).—Mr. Swezey reported the collection of this weevil by Mr. Wilder at Ulupalakua, Maui. A beetle that was collected by Dr. Perkins on Oahu, and considered by him to be an immigrant from Fiji. It had not been collected recently by local entomologists, and this is the first record from Maui.

Eupelmus setiger Perkins.—Mr. Swezey exhibited a specimen of this interesting eupelmid, which was reared from a larval case of *Hyposmocoma trimaculata* Walsm., collected on bark of Kukui in Waianae Mountains, January 27, 1924.

Levuana iridescens Beth.-Baker.—Mr. Ehrhorn exhibited a small box showing all stages of this insect, a serious pest on

coconut palms in Fiji. This exhibit was sent to him by the Government Entomologist at Suva.

Bruchus sp. near *coryphae* Oliv.—Mr. Ehrhorn exhibited, also, specimens of this bruchid, which were reared from seeds of *Ipomoea pes-caprae,* by Mr. E. L. Caum. The seeds were collected in an empty lot at the corner of Queen and Richard Streets, in Honolulu.

MARCH 6, 1924.

The 219th meeting of the Hawaiian Entomological Society was held at the H. S. P. A. Experiment Station at 2:30 p. m., President Swezey presiding. Other members present were Messrs. Bissell, Crawford, Ehrhorn, Rosa, Timberlake, Whitney, and Willard.

The minutes of the 218th meeting were read and approved.

Upon motion of Mr. Crawford, it was voted to comply with the request of The Science Museum of London that the Society donate a full set of its Proceedings to their library and place them on the mailing list for future publications.

NOTES AND EXHIBITIONS.

New records of Hawaiian ants.—Mr. Timberlake exhibited specimens of three ants, two of which have not been recorded heretofore from these islands, and the third previously unrecognized locally. These three species have been determined by Dr. William M. Wheeler. *Epitritus wheeleri* Donisthorpe. Three specimens collected by Mr. Swezey in a cane stool at Waimanalo, Oahu, June 30, 1922. The species was described from Honolulu in 1916. (Ent. Record 28, p. 121.) *Monomorium fossulatum seychellense* Emery. Several males of this subspecies were collected in Honolulu during the summer of 1916, the earliest one being dated May 2, 1916 (Timberlake); workers and one female were taken by Mr. Swezey at Puuloa, Oahu, April 10, 1922, nesting in the ground in a canefield. Several females were taken by Mr. Bryan in Makiki Valley, Oahu, September 30, 1922, and Mr. Pemberton collected workers at Hono-

kaa, Hawaii, in September, 1922. *Monomorium latinode* Mayr. A series of workers of this species was sent in to the Experiment Station from Nuuanu Valley in July, 1923.

Coleoptera collected in dead sisal.—Mr. Bissell exhibited specimens of the following Coleoptera which he collected in dead sisal back of the United States Experiment Station, Honolulu, February 14 and 18, 1924. *Blapstinus* sp., *Gonocephalum seriatum* (Boisd.), *Oxydema fusiforme* Woll. (*Pseudolus hospes* Perkins), *Scyphophorus* sp. (near *acupunctatus*). Of the *Scyphophorus* sp. he found numerous adults which were dead and mostly broken, dead pupae and larvae in pupal cases, and about two hundred pupal cases, which were constructed of the heavily massed fibers of the sisal leaves. A few of the cases contained dead larvae and pupae, but most of them had emergence holes which were usually turned toward the base of the leaf. The plant-stems had many holes, apparently made by the beetles passing from the leaf to the interior, or vice versa. A few adults and pupal cases were found attached to the inside of the stem, the pith of which was badly riddled by insects. One adult was found with a small hole in the anal end which may have been made by a dermestid. One dermestid larva and one cast skin were found in the plant. One dying sisal plant was examined, but no evidence of *Scyphophorus* was found.

Staphylinid beetle.—Mr. Swezey exhibited a large black staphylinid beetle collected by G. P. Wilder in cow dung at the Dowsett ranch above Kealakekua, Hawaii. It is the same species as a specimen exhibited at a previous meeting by Mr. Bissell, who stated that Mr. Pemberton had found it feeding on fruit-fly larvae in guavas on the ground.

Bruchus sp. near *coryphae* Oliv.—Mr. Swezey exhibited capsules of *Ipomoea pes-caprae* with the eggs of this bruchid. They are laid individually, of a greenish color, oval, and the surface thimble-like.

Pseudaphycus utilis Timb.—Mr. Swezey reported having bred two specimens of this Mexican parasite of the avocado mealy bug from the Waianae Mountains. A small amount of the mealy bug was observed on guava at a place on the firebreak

trail which skirts the Waianae Mountains beyond the Schofield Barracks target range at an elevation of about 1600 feet. This parasite was introduced in 1922. It was never distributed to that region, but has reached it of itself, indicating the likelihood of its very wide spread on this island.

Monopis meliorella (Walk.).—A specimen of this moth was exhibited by Mr. Swezey, captured by him at light at Lihue, Kauai, May 13, 1923. It is the first record of this moth on Kauai.

Chloridea obsoleta (Fabr.).—Mr. Swezey reported having found four caterpillars of this moth feeding on leaves of *Myoporum sandwicense* at Kolekole Pass, Waianae Mountains, February 10, 1924. This adds another to the list of food plants of this moth in Hawaii. After the Myoporum leaves were exhausted, these larvae fed on green tomatoes and the fruit of eggplant, but died before reaching full growth.

Paratenodera sinensis (Sauss.).—Mr. Swezey stated that Mr. Kutsunai had reported the finding of an adult praying mantis in a house at the Sugar Planters' Sub-Station, in the back part of Manoa Valley, February 19. A number of egg masses secured from Kohala, Hawaii, had been placed there in June, 1922. This is the first evidence of the insect having become established from these.

Chlorochroa uhleri Stal.—A specimen of this large green bug was exhibited by Mr. Swezey. It had been found by Mrs. Swezey, February 7, in a head of lettuce from California. It well illustrates how an occasional immigrant insect may arrive. This bug was probably hibernating in the lettuce head.

Rhyncogonus saltus Perk.—Specimens of this weevil were exhibited by Mr. Swezey. He had collected a good series (three dozen) on *Campylotheca menziesii* at Kolekole Pass, Waianae Mountains, February 10, 1924. This is the same locality where he had collected the only specimen previously known, in 1920. It has been named and described by Dr. Perkins, but the description has not yet been published.*

*Published in Proc. Haw. Ent. Soc., V, p. 379, 1924.

Eurytomid from Zelus eggs in Ecuador.—Mr. Timberlake exhibited specimens of a peculiar eurytomid which had been reared by Dr. F. X. Williams from *Zelus* eggs, collected at Tena, Ecuador, in May, 1923.

APRIL 3, 1924.

The 220th meeting of the Hawaiian Entomological Society was held at the usual place at 2:30 p. m. Members present, besides President Swezey, who presided, were Messrs. Bissell, Crawford, Giffard, Muir, Rosa, Timberlake, Wilder, and Willard.

Minutes of the previous meeting were read and approved as corrected.

PAPERS.

"Some Maui Insect Notes."

BY O. H. SWEZEY.

NOTES AND EXHIBITIONS.

Perissopterus carnesi Howard in Hawaii.—Mr. Timberlake exhibited specimens of this species from Makiki, Oahu. One specimen was taken on *Schinus* infested with *Saissetia nigra* (Nietn.) and other scales on February 10, 1924. Later, from material collected at that time, a small series was reared which apparently issued from *Saissetia.* The species is known to be a secondary parasite, and other parasites reared from the same material were *Scutellista, Tomocera, Aneristus, Microterys,* and *Quaylea.* This is probably the species which Kotinsky reported was introduced from China in the summer of 1906. In 1913, Fullaway recorded a *Perissopterus* from *Lepidosaphes* in Honolulu, which is presumed to have been the same species.

Hawaiian Ophionines.—Mr. Timberlake exhibited some of the rarer Hawaiian Ophionines, including the following:

Enicospilus pseudonymus Perkins.

One female from Haleakala, Maui (5000 feet).

Enicospilus tyrannus Perkins.
One female from Twenty-nine Miles, Hawaii, taken at light.

Enicospilus ashmeadi Perkins.
Kohala Mountains and Pahala, Hawaii.

Erymotyloides orbitalis (Ashmead).
Halemanu and Kaholuamano, Kauai.

Pycnophion molokaiensis Ashmead.
Waialeale and Kaholuamano, Kauai.

Pycnophion fuscipennis Perkins.
Two males and one female from Haleakala, Maui, and type female from Kauai.

Banchogastra nigra Ashmead.
Small series from Pahala and Kilauea, Hawaii.

A New Mantis From Kauai.—Mr. Swezey exhibited a fine female mantis received April 1, from Mr. C. B. Hofgaard, Waimea, Kauai, which is different from any before known in the Islands.

Antlion on Hawaii.—Mr. Swezey presented the following notes on observations made by Mr. W. H. Meinecke:

"On August 9, 1923, at Kapulehu, Kau, Hawaii, a dragonfly was seen on the wing eating an antlion. On July 1, 1923, an antlion was observed flying across the Government road below the old prison camp, west of Kilauea Military camp, Island of Hawaii."

MAY 1, 1924.

The 221st meeting of the Hawaiian Entomological Society was held at the usual place, with President Swezey presiding. Other members present were Messrs. Crawford, Ehrhorn, Muir,

Timberlake, and Willard. Mr. A. C. Wertheim, a member of the Nederland Entomological Society, was a visitor.

The minutes of the 220th meeting were read and approved.

PAPERS.

"Notes on California Psyllidae."

BY D. L. CRAWFORD.

"The Homopterus Genus Mesohomotoma (Psyllidae or Chermidae)."

BY D. L. CRAWFORD.

"The Genus Macrohomotoma (Psyllidae or Chermidae)."

BY D. L. CRAWFORD.

"The Tomato Hawk-Moth in Hawaii."

BY O. H. SWEZEY.

NOTES AND EXHIBITIONS.

Hadronotus.—Mr. Timberlake reported that this parasite, recorded as a *Telenomus* in these Proceedings, Vol. V, p. 9, really is a *Hadronotus* and not a *Telenomus.*

Pseudaphycus utilis Timb.—Mr. Timberlake exhibited specimens of *Pseudococcus nipae* on guava leaves collected by Mr. Quan Chock near Waikane, Oahu, on April 30, 1924, and which were heavily parasitized by *Pseudaphycus utilis.* This parasite was introduced from Mexico in 1922, and has practically exterminated its host from Honolulu and vicinity so that it is now necessary to go to the more remote parts of the Island to find the mealy bug in quantity. From the indications shown by the Waikane specimens, it will not be long before the host disappears also on windward Oahu.

Hawaiian Formicidae.—Mr. Timberlake read portions of a recent letter from Dr. W. M. Wheeler concerning two Hawaiian ants. The little yellow ant, which is now so abundant in Honolulu, is identified by Dr. Wheeler as *Plagiolepis mactavishi*

Wheeler, and there is possibly some error of identification in the recording of *P. exigua* from the Islands.

The *Brachymyrmex,* which was taken by Dr. Lyon in 1914 in orchid baskets in Honolulu, according to Dr. Wheeler is apparently *B. heeri* Forel, var. *aphidicola* Forel. This variety was originally described from Bermuda, but later found in Paraguay and other parts of South America. Dr. Wheeler was not absolutely certain of the identification, as he had no specimens of the variety for comparison, which had been authentically named by Forel.

JUNE 5, 1924.

The 222nd meeting of the Hawaiian Entomological Society was convened at the usual place at 2:30 p. m., President Swezey presiding. Other members present: Messrs. Crawford, Ehrhorn, Rosa, Wilder, and Willard.

The minutes of the previous meeting were read and approved.

Upon motion by Mr. Ehrhorn, it was voted to send a set of our Proceedings to the Natural History Survey Library, Urbana, Illinois, and request that this Society be put on their mailing list.

PAPERS.

"Psyllidae of India."

BY D. L. CRAWFORD.
(Withdrawn for publication in "Records of Indian Museum.")

"Psyllidae of South America."

BY D. L. CRAWFORD.
(Withdrawn for publication in "Broteria.")

NOTES AND EXHIBITIONS.

Coconut leaf-roller at Molokai.—Mr. Swezey reported that he observed in a large coconut grove near Kaunakakai, Molokai, May 25, that the leaves were in a very perfect condition. There was very little injury by the coconut leaf-roller *Omiodes black-*

burni (Butl.), less than he had ever seen anywhere in the Islands. Examination of leaves where there was injury by the caterpillars, brought to light numerous parasite cocoons. There were about a dozen of these cocoons in one place within a space of three inches. Parasites had already issued, but in another place a living cocoon was found, from which later the parasite *Cremastus hymeniae* issued. It has been known that this parasite attacked the coconut leaf-roller, as well as many other species of leaf-rollers, both native and introduced, but they had not been found so abundant anywhere or so effective as in the present instance. It is no doubt due to it that the coconut leaves are so nearly perfect in the grove mentioned near Kaunakakai.

Amaranth Jassid.—Mr. Swezey reported collecting the little green amaranth Jassid on amaranth at Kaunakakai, Molokai, May 25. It is the first record of its occurrence on that island.

Habits of the mango weevil.—Mr. Wilder exhibited specimens of the mango weevil *Sternochaetus mangiferae* (Fabricius). He had observed them crawl down the stems and onto the mango to oviposit. He stated that they were very easily alarmed, and that if they saw the observer they immediately ran up the stem to their hiding places, probably under the rough bark of the tree.

JULY 3, 1924.

The 223rd meeting of the Hawaiian Entomological Society was held at the H. S. P. A. Experiment Station, President Swezey in the chair. Other members present: Messrs. Crawford, Ehrhorn, Rosa, and Willard.

The minutes of the previous meeting were read and approved.

The Acting Secretary proposed Mr. Alfred Lutken of the United States Bureau of Entomology for active membership in the Society.

PAPER.

"Notes on Hawaiian Psyllidae."

BY D. L. CRAWFORD.

NOTES AND EXHIBITIONS.

Borer grubs in pine packing-box.—Mr. Swezey exhibited two alcoholic specimens of borer grubs from a pine packing-case from Youngstown, Ohio. This serves as another illustration of the opportunities that insects have for arriving here, and is one way to account for some of the chance immigrants that are found from time to time. In this case, if the larvae had remained in the wood undisturbed until the mature beetles were formed, there would probably have been no likelihood of the species becoming established, as it probably was a species occurring only in pine trees, of which none would be found for it in Honolulu.

Chalcolepidius erythroloma Cand.—Mr. Swezey exhibited preserved full-grown larva and pupa of this large elaterid beetle. Two larvae were found in a rotten kukui log in Niu Valley, January 13, 1924. They are predacious and had been fed on pupae of the cane-borer, until recently when one of them had pupated.

AUGUST 7, 1924.

The 224th meeting of the Hawaiian Entomological Society was held at the Experiment Station of the H. S. P. A., in joint session with the section on Plant Quarantine, Plant Entomology, and Plant Pathology of the Pan-Pacific Food Conservation Conference. The Society was honored by the attendance of the following Conference delegates and visitors: Delegates—Dr. L. O. Howard, Chief, Bureau of Entomology, U. S. Department of Agriculture, and Chairman, First Pan-Pacific Food Conference; Dr. C. L. Marlatt, Chairman, Federal Horticultural Board, Washington, D. C.; Dr. Royal N. Chapman, Associate Professor of Animal Biology and Entomology at University of Minnesota; Dr. Herbert Osborn, Research Professor, Ohio State University; D. S. North, Plant Pathologist to Colonial Sugar Refining Co., Sydney, N. S. W.; Dr. J. B. Johnston, Dean College of Science, Literature and Arts, University of Minnesota; Dr. Theo. D. A. Cockerell, Professor of Zoology, University of Colorado. Visitors—Q. C. Chock of the Board of Agriculture and Forestry,

Honolulu, and Charles F. Mant of Honolulu. Besides President Swezey, who presided, the following members were present: Messrs. Crawford, Ehrhorn, Giffard, Lutken, Pemberton, Rosa, Willard, and Williams.

The minutes of the 223rd meeting were read and approved.

Upon motion of Mr. Giffard, the rules were suspended and the Secretary cast a unanimous ballot, electing Mr. Alfred Lutken, of the United States Bureau of Entomology, an active member.

As moved by Mr. Giffard, it was voted that the President and Acting Secretary draft a resolution of condolence to be sent to Mr. and Mrs. R. H. Van Zwaluwenburg, and that a copy be placed in the files of the Society.

The meeting was opened by President Swezey for papers and discussions, prepared for the regular Conference Section session. Two very interesting papers were presented, the first being:

"Economic Entomology in New South Wales," brought from the Government Entomologist of N. S. W. by Sir Joseph H. Carruthers. This paper was presented by Mr. Swezey, who called attention to the more important parts.

"Pests Attacking Stored Foods and Means of Control," by Dr. Royal N. Chapman, was the second paper presented, and presented some very interesting methods now being used to control these pests. These papers, together with the interesting discussion evoked by them, will be published elsewhere.*

Wasps From Tropical Countries.—Mr. Williams exhibited a box of these insects and made the following remarks:

This exhibit consists of *Larra* wasps and their prey from several tropical regions, and of *Podium* and *Trigonopsis* wasps and their prey from South America. The species of *Larra* prey on mole-crickets (Gryllotalpinae) and usually select a particular species. Unlike other wasps of Larridae, they do not make nests of any kind, but, driving the mole-cricket to the surface of the

*Proceedings of the First Pan-Pacific Food Conservation Conference, pp. 380, 387, 1925.

ground, there attack and parasitize it, laying the egg in a place where the host, which soon recovers from the stings, may not reach it. The mole-cricket is ultimately devoured by the wasp grub, which elaborates a cask-like cocoon in the cricket's burrow. The *Podium* wasps prey on cockroaches, and each species is more or less attached to a species of cockroach. The wasps, according to the species, store their paralyzed victims either in mud cells or in short tunnels in the earth. In two species observed, the egg is laid on the roach before it is passed into the nest by the wasp. A number of *Podium haematogastrum* Spinola from Para, Brazil, have already been liberated in Makiki Valley, Honolulu.

Statement by Dr. Howard.—I wish to place on record my appreciation of the Hawaiian Entomological Society. I have attended many meetings of entomological societies all over the world. Other entomologists collect insects. Formerly, I collected insects, but of late I have been collecting entomological societies, and one of the best specimens I have had is the Hawaiian Entomological Society of Hawaii. When you first began your publications, I read them as I do other publications from other parts of the world that are received at Washington. Now, when I get a copy of the proceedings of your society, I sit up nights to finish it: not that you are more clever than entomologists in other places, but you have a way of bringing out discussions that interests me enormously.

SEPTEMBER 4, 1924.

The 225th meeting of the Hawaiian Entomological Society was held at the experiment station of the H. S. P. A. on the above date. Present: O. H. Swezey, Chairman, and the following members: F. X. Williams, H. F. Willard, E. M. Ehrhorn, Joseph Rosa, L. A. Whitney, Alfred Lutken, and D. T. Fullaway, Secretary.

The minutes of the previous meeting were read and approved with certain corrections.

NOTES AND EXHIBITIONS.

Xiphidiopsis lita Hebard.—Mr. Ehrhorn reported finding a

female specimen of this insect on August 30, 1924, in his door-yard on Oahu Avenue, Manoa Valley.

Paratenodera sinensis (Sauss.).—Mr. Swezey exhibited a specimen of this insect which had been collected by Mr. Kutsunai at the H. S. P. A. Experiment Station grounds in upper Manoa Valley. This specimen was two-thirds grown when found, and mature at time of exhibition. It is the second one that has been recovered since egg-cases from Kohala were put out at the Experiment Station grounds two years ago, and is sufficient proof that the insect is now established there.

Dromaeolus perkinsi Sharp.—Mr. Swezey exhibited a specimen of this beetle collected by Mr. Ehrhorn at Waiahole, Oahu, on July 4, 1924. It was previously collected by Perkins in Kona and at Kilauea, Hawaii. This is the first record of its occurrence on Oahu.

New Immigrant Mirid Bug.—Mr. Swezey exhibited specimens of a small mirid bug collected on tomato vines in his garden in Manoa Valley, August 13, 1924. It is a species not hitherto noticed here, and its identity has not yet been determined.*

OCTOBER 2, 1924.

The 226th meeting of the Hawaiian Entomological Society was held in the entomological laboratory of the H. S. P. A. Experiment Station on the above date, Mr. Swezey presiding. Others present were Messrs. Williams, Illingworth, Giffard, Muir, Ehrhorn, Willard, Rosa and Fullaway, members, and D. C. Seaton, visitor.

No business transacted.

NOTES AND EXHIBITIONS.

Helcogaster sp.—Mr. W. M. Giffard exhibited a specimen of a beetle referred to this genus of the Family Malacodermidae,

*Determined later by Mr. E. P. Van Duzee of the California Academy of Sciences as *Engytatus geniculatus* Reuter, a bug which is spread across the Southern States, but is not recognized as a pest.

stating that it was close to, but apparently different, from *H. pectinatus* Shp. The latter species is represented by one example in the H. S. P. A. Experiment Station collection taken in Honolulu by D. T. Fullaway. Mr. Giffard's insect was captured in the dense forest near S. Kona Road, on the island of Hawaii, August 31, 1924. First record of occurrence outside of Honolulu. Dr. Perkins (F. H., III, p. 368) states that *Helcogaster pectinatus* is generally found in houses. There were no habitations for some miles where the Kona specimen was taken.

Mantids.—Mr. Ehrhorn exhibited a series of mantid species, the egg masses of which were taken in quarantine; later the mantids reared in his laboratory. He drew attention to the possibility of acclimatization occurring from such frequent introductions.

Urosigalphus bruchi Crawf.—Mr. Willard reported, on behalf of Mr. Lutken, rearing six individuals of this braconid from *Caryoborus gonagrus* (Fab.). Out of a dozen cocoons from pods of algaroba, six *Urosigalphus* were obtained. This parasite is also obtained from *Bruchus sallei* Shp.

Coptotermes and *Cryptotermes* on Hawaii. — Mr. Fullaway reported the species of these two highly injurious termite genera to be present in Hilo now. Examples of *Coptotermes intrudens* Oshima were collected on the Kuhio wharf, and the work of *Cryptotermes piceatus* Snyder was noticed at the Hilo Hotel in September, 1924. It is believed both species have been there for more than a year already.

Bruchus sp. near *coryphae* Oliv.—Mr. Swezey exhibited a specimen of this weevil collected on a car seat in a train, September 21, 1924, while traveling along the north coast of Oahu near Puuiki. He also reported finding this weevil on morning glory vines on roadsides in Ewa Plantation, September 23, 1924. Their eggs were quite numerous on seed pods of *Ipomoea tuberculata.* One adult had already issued from seed pods brought in.

Euscepes batatae (Waterhouse). — Specimens of this sweet potato weevil were exhibited by Mr. Swezey. He had obtained them from a tuberous root of *Ipomoea pentaphylla,* growing in canefield at Ewa Plantation, September 23, 1924. The root was

somewhat exposed above the surface of the ground, and had numerous exit holes from which beetles had issued. The vines attached to the root were also infested by the weevil, and had a number of the exit holes. Apparently, this is the first record in Hawaii of this weevil attacking any other plant than sweet potato.

Lagocheirus obsoletus Thoms.—An adult of this longicorn beetle was exhibited by Mr. Swezey, which had issued from a pupa found by him in a dead branch of *Euphorbia* on a ridge back of Hauula at an elevation of about 1000 feet, September 20, 1924.

Curtomerus pilicornis (Fab.).—A specimen of this cerambycid beetle was exhibited by Mr. Swezey, which had just matured from a pupa collected in dead guava, September 28, 1924. Many larvae were found feeding beneath bark of recently cut trees of the waiwi guava on the Kahauiki ridge above Fort Shafter. A few pupae were found in cells which they had excavated in the wood for pupation. Mr. Swezey stated that he had often observed that felled guava trees and cut-off branches were usually considerably attacked by larvae of some beetle feeding under the bark, but this was the first time he had reared one to ascertain the species. He had also reared this species from dead *Eucalyptus, Datura* and *Acacia farnesiana.*

Syagrius fulvitarsis Pascoe.—Mr. Swezey reported finding the fern weevil as far west as Kahauiki, on a ridge in between Kalihi Valley and Moanalua Valley, directly above Fort Shafter. Only two or three *Sadleria* ferns were noticed, and they were badly eaten by the weevil, apparently would soon be dead. In cutting up several stems, cocoons were found in two places in the burrows of the weevil, which indicated that its parasite is present there.

Ceratitis capitata Wied.—Mr. Swezey reported rearing the Mediterranean fruit-fly from bananas. Two imperfect, injured, overripe fruits, of the largo or Mexican variety, that had ripened on the tree, were found to have maggots when examined September 10, and from September 23 to 29 fifteen flies were matured.

Lycaena blackburni (Tuely).—Mr. Swezey reported having found three larvae of this native butterfly on *Perrottetia Sandwicensis,* on the Manoa Cliffs Trail, Tantalus, August 16, 1924. One adult issued in due time, but owing to having been neglected it was ruined for a specimen. The species could be determined, however, and it is the first record of its feeding on this tree, the usual food plants of the larvae of this butterfly being koa and *Dodonaea.*

Scarcity of Roaches in Cafeteria.—Mr. Swezey reported that Mr. Landrum had told him of the entire absence of roaches at the cafeteria in the cannery of the Hawaiian Pineapple Co., at Iwilei, Honolulu. For the past several years the roaches had been a great nuisance there, but for the past two months there were none at all.

Veronicella leydigi Simroth.—Mr. Swezey stated that in a recent letter from Dr. T. D. A. Cockerell, Boulder, Colorado, this determination was given for the large black slug so common in Honolulu. Dr. Cockerell further stated that it was "Described from Queensland (where supposed to be introduced) and also known from New Hebrides. See Queensland Agricultural Journal, Vol. V, Pt. 1 (1899)."

Effect of Volcanic Dust on Insects.—Mr. Giffard reported that the infestation of the ohia thrips on his fuschias at Kilauea had been entirely removed by the volcanic dust which fell in that region during the summer of 1924.

Mr. Illingworth spoke of his experiences in China during the past year.

NOVEMBER 6, 1924.

The 227th meeting of the Hawaiian Entomological Society was held at the H. S. P. A. Experiment Station on the above date at 2:30 p. m. Mr. Swezey presided. Other members present were Messrs. Rosa, Lutken, Osborn, Williams, Giffard, Muir, and Fullaway.

The minutes of the previous meeting were read and approved.

Mr. Swezey proposed the name of Mr. R. H. Van Zwaluwenburg for membership.

Mr. Muir presented the following paper: **"List of the Genera of Cixiidae sens. lat."**

NOTES AND EXHIBITIONS.

Silaon rohweri Brid.—F. X. Williams reported finding this small larrid wasp, discovered some years ago by Bridwell at Ewa coral plain, as plentiful November 2, 1924, on the lowlands between Waimanalo and Makapuu, Oahu.

Aulacaspis fulleri Ckll.—Mr. Giffard reported as follows: Professor T. D. A. Cockerell writes me under date of October 13, 1924, that at the Chinese banquet held during the Pan-Pacific Conference in August last his attention was called to a scale infesting one of the table decorations. The latter was determined by Miss Eastwood, Botanist of the California Academy of Science, as *Aglaia odorata* (a Chinese stove-plant). Professor Cockerell states, "I did not know the species (of scale) offhand, and sent some to my friend Laing of the British Museum. He finds that it is *Aulacaspis fulleri* (Ckll.), which I described long years ago from South Africa and which apparently has not been found elsewhere.

Mr. Ehrhorn remarked that *fulleri* had been described as a variety of *crawii,* and Laing considers it a good species. He also noted that Cockerell claims that our *Phenacaspis eugeniae* is *P. dilatata.*

Sitotroga cerealella (Oliv.).—Mr. Fullaway reported rearing the Angoumois grain moth from corn sent to Honolulu from Waikii, Hawaii (Parker ranch), in October, 1924. He also reported that the chalcid parasite of army-worms, *Euplectrus platyhypenae* Howard, introduced from Mexico in 1923, has become established at Honokaa (Mr. Pemberton) and at Olaa (Mr. Starrett), Hawaii.

Pseudaphycus utilis Timb.—Mr. Swezey reported that *Pseudococcus nipae* (Mask.) was almost entirely absent from guava in Hauula Valley, September 20, 1924. A small shoot near the ground was found with a few leaves having a few of the mealy

bug. They were brought in to breed out the parasite. None issued, however, but, when examined later on, several of the mealy bugs were found, from which parasites had issued, and three were found to contain dead adult parasites, *Pseudaphycus utilis.*

Bruchus phaseoli Gyll.—Mr. Swezey exhibited specimens of this bean-weevil reared from *Dolichos lablab* seeds collected at Keawakalani, Molokai, in July, 1924, by C. M. Cooke, Jr. The locality is near the western end of the island. This is the first record of this weevil occurring on Molokai.

Nesidiorchestes hawaiiensis Kirk.—Mr. Swezey exhibited a specimen of this tiny brachypterous bug collected by him along the Firebreak Trail, Waianae Mountains, October 26, 1924. It was collected from his clothing as he sat among vines, eating lunch. Hitherto it has been recorded from the Koolau Mountains, and apparently this is the first record from the Waianae Mountains.

Neoclytarlus fragilis (Shp.).—Mr. Swezey exhibited a piece of a koa branch about six inches long and two inches in diameter, taken from a felled koa tree at about 2000 feet elevation on the ridge back of Fort Shafter, September 28, 1924. Up to October 19, 1924, four *N. fragilis* beetles had issued from the piece of wood. A species common on koa on Oahu, but not previously collected by him. Six *Ischiogonus palliatus* (Cam.) also issued, they having been parasitic on the larvae of *N. fragilis.*

From this same piece of wood, 175 scolytids had issued. They were of two or three species, species undetermined. The scolytids had fed in the wood, but the *N. fragilis* larvae had fed on the inner bark and outer sapwood, finally burrowing into the wood deep enough to form a cell for pupation and final transformation.

DECEMBER 4, 1924.

The 228th meeting of the Hawaiian Entomological Society was held on the above date at the H. S. P. A. Experiment Station, at the usual hour.

Mr. Swezey presided. Other members present were Messrs.

Williams, Illingworth, Rosa, Giffard, Muir, Van Zwaluwenburg, Bryan, Willard, and Fullaway.

The minutes of the last meeting were read and approved.

The Treasurer's report for the year was read and approved. H. F. Willard was appointed to audit the same, and reported that the accounts of the Society to December 1, 1924, according to his examination, were correct and agreed with the report in total.

The Editor reported that the Proceedings of the Society for 1923 would be ready for distribution in about two weeks.

Mr. R. H. Van Zwaluwenburg was duly elected to active membership.

A letter from the Zoological Society of London in regard to the financial arrangements for the continuation of the Zoological Record was read, and it was voted to take the same action on this matter as was done last year: namely, members of the Society to guarantee $25 to assist the publication.

Election of officers for 1925 resulted as follows: President, F. X. Williams; Vice-President, H. F. Willard; Secretary-Treasurer, D. T. Fullaway. Additional members of Executive Committee: W. M. Giffard, O. H. Swezey.

PAPERS.

Mr. Fullaway presented the following paper by title on behalf of Mr. Timberlake:

"Descriptions of New Chalcid-Flies From Panama and Hawaii (Hymenoptera)."

Mr. Giffard presented a paper entitled **"A Revision of the Hawaiian Cixiidae and Description of Species."**

Mr. Muir withdrew the paper presented by him at the November meeting and presented another, entitled **"The Status of the Anterior Processes in the Male Genitalia of Homoptera."**

Mr. Bryan presented a paper on **"The Levuana Moth in Fiji,"** and exhibited specimens.

Mr. Swezey then read his presidental address, entitled

"The Insect Fauna of Trees and Plants as an Index of Their Endemicity and Relative Antiquity in the Hawaiian Islands."

NOTES AND EXHIBITIONS.

Toxoptera aurantii (Fons.).—Mr. Fullaway reported this aphid from the young leaves of Ohia-ha, at the forest edge on the land of Keokeo, Kona, Hawaii, November 13, 1924. They were engaged in making the synchronous movements reported of aphids elsewhere.

Xiphidiopsis lita Hebard.—Mr. Fullaway reported this grasshopper from the Kona district of Hawaii, collected November 12, 1924, at Miss Ella Paris' homestead. First record from Kona.

Dryophthorus homoeorhynchus Perkins.—Mr. Swezey exhibited specimens of this weevil collected by him November 23 from a dead *Dracaena* tree in the edge of the forest at Pupukea at about 1000 feet elevation. Quite a good many were present in the tree, chiefly in and beneath the rotten bark. Fourteen specimens were collected. The species was described from Kauai, where it was collected by Perkins at Koholuamano at 4000 feet elevation. Apparently, it has not been recorded from elsewhere until now.

Tricentrus albomaculatus Distant.—Mr. Swezey reported that he had sent specimens of the membracid that is sometimes found abundantly about Honolulu, to Professor W. D. Funkhouser of the University of Kentucky for determination. Professor Funkhouser had replied as follows: "The species is *Tricentrus albomaculatus* Distant, of which I have specimens determined by Distant. It shows considerable variation. It is not only abundant in India, but I have a long series from Singapore and another series from the Island of Penang." This insect is first referred to on page 188 of Vol. 2, Proc. Haw. Ent. Soc., 1912. It has increased of recent years and become more widely spread in Honolulu and its outskirts. It has been found breeding on *Eucalyptus, Sesbania,* Ilang-ilang and pigeon peas.

Pseudaphycus utilis Timb.—Mr. Swezey reported on the establishment of this parasite at Honokaa, Hawaii, and at Ulapalakua,

Maui. Eleven specimens had emerged from *Pseudococcus nipae* on guava leaves brought in by Mr. Osborn from Ulapalakua, November 12. Fourteen specimens had issued from similar material sent in by Mr. Pemberton from Honokaa, November 20.

Scymnus dorcatomoides Weisse. — Mr. Swezey exhibited a specimen of a small lady beetle that appeared to be this species, or near it, which he caught on a pepper tree (*Schinus terebinthifolius*) in Manoa Valley, November 27, 1924. It was not learned what its host might have been, as there seemed to be no infestation by mealy bugs, aphis, or scales. There appears to be no record of the introduction of the species. But it must be one of the early introductions of Koebele which has hitherto escaped notice. The species is Oriental, and there are specimens in the Koebele collection from Japan, China, and Formosa.

Koeneniidae.—Mr. Muir exhibited specimens of a koeneniid (Order Palpigrade) found by Mr. Van Zwaluwenburg in soil of cane-fields at depths of seven to eleven inches on Oahu. This is the first record for the order in the Islands.

Small Carabid.—Mr. Van Zwaluwenburg exhibited a minute carabid beetle apparently without eyes, taken in soil at a depth of seven to nine inches on the grounds of the H. S. P. A. Experiment Station. The species is much smaller than any previously captured here.